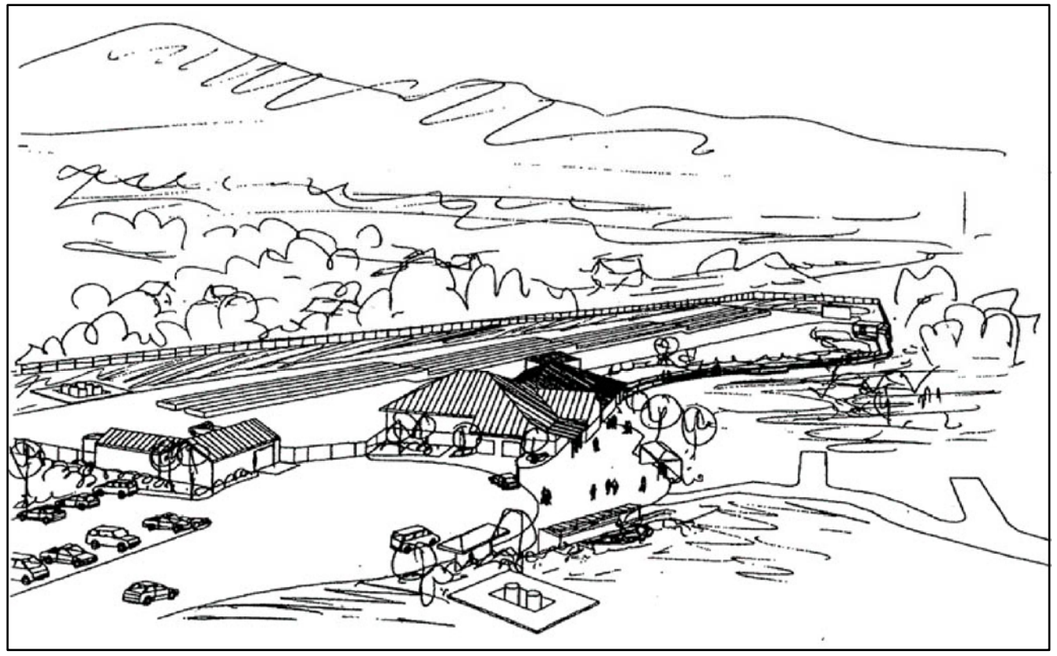


Utah Division of Wildlife Resources

Kamas Fish Hatchery
Solids Disposal Project

PRELIMINARY
NOT FOR CONSTRUCTION

Preliminary Design
June 22, 2010

MWH

Salt Lake City
Utah

VICINITY MAP

NO SCALE

UTAH MAP

NO SCALE

SHEET INDEX

GENERAL NOTES:

1. CONTRACTOR SHALL REMOVE, PRESSURE WASH AND RELOCATE THE EXISTING MICROSCREEN TO AN ONSITE LOCATION SPECIFIED BY THE OWNER. ALL THE PIPING CONNECTED TO THE MICROSCREEN SHALL BE MODIFIED AND RELOCATED AS NEEDED TO CONNECT NEW VACUUM FILTER.
2. THE 4-INCH DRAIN LINE FROM THE MICROSCREEN TO THE SOLIDS VAULT SHALL BE BLIND FLANGED.
3. EXISTING SUPPORT BRACKETS FOR THE MICROSCREEN SHALL BE CUT AND DISPOSED.
4. EXHAUST FAN (EF-9) LOCATED ON THE WEST SIDE OF THE BUILDING SHALL BE RELOCATED TO THE NORTHWEST SIDE OF THE BUILDING. CONTRACTOR SHALL COORDINATE ALL POWER, WIRING, STRUCTURAL AND MASONRY REQUIREMENTS TO PROVIDE A FUNCTIONAL EXHAUST FAN.
5. CONTRACTOR SHALL SALVAGE EXISTING CONCRETE BLOCK AS NEEDED AFTER OPENING THE AREA FOR THE DOUBLE-SWING DOOR. BLOCK SHALL BE USED TO COVER AREA OCCUPIED BY THE OLD LOCATION OF THE EXHAUST FAN. CONTRACTOR SHALL DISPOSE OF LEFT OVER DEBRIS.
6. CONTRACTOR SHALL RELOCATE THE POLYMER TANK AND IT'S BASE TO AN ONSITE LOCATION INDICATED BY THE OWNER.
7. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL DEBRIS FROM DEMOLITION OFF-SITE AT THE CONTRACTOR'S EXPENSE.
8. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS AND SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT UTILITY LINES WHETHER SHOWN OR NOT SHOWN.
9. CONTRACTOR SHALL POTHOLE EXISTING PIPES TO DETERMINE EXACT PIPE INVERT, SIZE, LOCATION, AND MATERIAL TO DETERMINE IF THERE ARE CONFLICTS PRIOR TO PURCHASE OF MATERIAL.

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY

(PROJECT MANAGER'S NAME) LICENSE NO. DATE

(COMPANY OFFICER'S NAME) LICENSE NO. DATE

MWH

Utah Division of Wildlife Resources

Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

GENERAL NOTES, VICINITY MAP, LEGEND, SHEET INDEX

SHEET G-2

Plot Date: 6/22/2010 1:08:04 PM
User: Owner
File: K-G002.DGN Model: Model DesignScript: MWH_MstnPentable_V85.tbl PlotScale: 2.0124 ' / in.

A	AIR / AMPERE
A/C	AIR CONDITIONING
A/R	AIR RELEASE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN	ABANDON
ABND	ABANDONED
ABBR	ABBREVIATION
ABS	ABSOLUTE TEMPERATURE
AC	ACTIVATED CARBON / ASPHALTIC CONCRETE / ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INTERNATIONAL
ACOUS	ACOUSTIC / ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE / ASPHALTIC CONCRETE PAVEMENT
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM / ALUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
APPURTS	APPURTENANCES
ARCH	ARCHITECTURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	ACOUSTICAL TILE
ATM	ATMOSPHERE
AV/AR	AIR VACUUM AND AIR RELEASE VALVE
AVE	AVENUE
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL AND SPIGOT
B/W	BACK OF WALL / BACK OF WALK
BC	BEGIN CURVE / BOLT CIRCLE / BETWEEN CENTERS / BACK OF CURVE
BCR	BEGIN CURB RETURN
BD	BOARD
BDRY	BOUNDARY
BF	BLIND FLANGE / BOTTOM OF FOOTING
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK / BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM / BENCH MARK
BO	BLOW-OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRK	BRICK / BREAK
BSMT	BASEMENT
BT	BOLT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE
C	CENTIGRADE / CHANNEL / CEMENT
C&G	CURB AND GUTTER
CAB	CABINET / CRUSHED AGGREGATE BASE
CAP	CAPACITY
CATS	CASING TEST STATION
CATV	CABLE TELEVISION
CB	CATCH BASIN / CHALKBOARD / CURB
CC	CLOSED CIRCUIT TV / CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMENT
CF	CURB FACE / CUBIC FOOT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHG	CHANGE
CHKD	CHECKERED
CI	CAST IRON
CIP	CAST IRON PIPE / CAST IN PLACE
CIPP	CAST IN PLACE PIPE
CJ	CONSTRUCTION JOINT
CL	CHLORINE GAS / CHLORINATOR / CENTERLINE
CLF	CHAIN LINK FENCE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR / CLEARANCE
CMB	CRUSHED MISCELLANEOUS BASE
CMC	CEMENT MORTAR-COATED
CML	CEMENT MORTAR-LINED
CML&C	CEMENT MORTAR-LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATIONS CABLE
COMP	COMPRESSOR
CONC	CONCRETE / CONCENTRIC
COND	CONDENSER / CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCT / CONSTRUCTION
CONT	CONTINUED / CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
COTG	CLEANOUT TO GRADE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAUSTIC SODA / CAST STEEL
CSP	CORRUGATED STEEL PIPE
CSTS	CURRENT SPAN TEST STATION
CT	CERAMIC TILE
CTR	CENTER
CTS	CORROSION TEST STATION
CTSK	COUNTERSUNK
CU	COPPER / CUBIC
CULV	CULVERT
CV	CHECK VALVE
CY	CUBIC YARD
CYL	CYLINDER
d	PENNY
DAD	DOUBLE ACTING DOOR
DAFT	DISSOLVED AIR FLOTATION THICKENER
DB	DIRECT BURY
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DG	DOOR GRILL
DH	DOUBLE HUNG
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER / DIFFERENTIAL
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DISP	DISPENSER
DL	DEAD LOAD
DMH	DROP MANHOLE
DN	DOWN
DO	DISSOLVED OXYGEN / DITTO
DR	DOOR / DRAIN
DS	DRENCH SHOWER AND EYE WASH
DT	DRAIN TILE
DWG	DRAWING
DWLS	DOWELS
DWY	DRIVEWAY
E	EAST
E/O	EAST OF
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE / EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE / EDGE OF GUTTER / EXHAUST GRILLE
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRICAL / ELECTRONIC
EN	EDGE NAILING
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EP	EDGE OF PAVEMENT
EPT	ETHYLENE PROPYLENE
EQ	EQUAL
EQUIP	EQUIPMENT
ESMT	EASEMENT
ETB	EMULSION TREATED BASE
ETC	ET CETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY / EYE WASH
EX	EXISTING
EXC	EXCAVATION
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR / EXTENSION
EXTR	EXTRUDED
F	FAHRENHEIT / FINISH
F TO F	FACE TO FACE
F&C	FRAME AND COVER
F&I	FURNISH AND INSTALL
FAB	FABRICATE / FABRICATION / FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR / FLOOR BEAM / FIELD BOOK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDR	FEEDER
FE	FIRE EXTINGUISHER / FINAL EFFLUENT
FEM	FEMALE (PIPE THREAD)
FF	FLAT FACE / FAR FACE / FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT / FLAT HEAD
FIG	FIGURE
FIN	FINISHED
FIX	FIXTURE
FL	FLOWLINE / FLOOR
FLEX	FLEXIBLE
FLG	FLANGE / FLOORING
FLGD	FLANGED
FLOCC	FLOCCULATOR / FLOCCULATION
FLR	FLOOR
FLSG	FLASHING
FM	FACTORY MUTUAL (LAB APPROVED) / FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE / FIBER OPTIC CABLE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTS	FOREIGN PIPE TEST STATION
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHED SURFACE / FAR SIDE / FLOOR SINK / FORGED STEEL / FROTH SPRAY
FT	FEET / FOOT
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
FWD	FORWARD
G	GAS
GA	GAGE / GAUGE
GAL	GALLON
GALV	GALVANIZED
GANC	GUY ANCHOR
GB	GRADE BREAK
GEN	GENERAL / GENERATOR
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GLASS / GROUND LINE / GRADE LINE
GLB	GLUE LAMINATED BEAM / GLULAM
GLV	GLOBE VALVE
GM	GAS METER
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRD	GRADE / GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM
H	HIGH / HEIGHT
H&V	HEATING AND VENTILATING
H/B	HOSE BIBB
HC	HOUSE CONNECTION
HDR	HEADER
HDW	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
Hg	MERCURY
HGL	HYDRAULIC GRADE LINE
HGR	HANGER
HM	HOLLOW METAL
HORZ	HORIZONTAL
HP	HIGH POINT / HORSE POWER / HIGH PRESSURE
HPG	HIGH PRESSURE GAS
HR	HEAT RETURN / HOUR
HSL	HORIZONTALLY SLOTTED
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER / HEADWORK
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRAULIC / HYDRANT
I/O	INPUT/OUTPUT
I&O	INSIDE AND OUTSIDE
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN	INCH
INCL	INCLUDE / INCLUDING
INFL	INFLUENT
INSL	INSULATION / INSULATING / INSULATED
INSP	INSPECTION
INST	INSTRUMENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION
JAN	JANITOR
JC	JUNCTION CHAMBER
JCT	JUNCTION
JS	JUNCTION STRUCTURE
JSTS	JOISTS
JT	JOINT
k	KILO
K	KELVIN / KARAT
kg	KILOGRAM
km	KILOMETER
kV	KILOVOLT
kVA	KILOVOLT AMPHERE
kW	KILOWATT
kWh	KILOWATT HOUR
L	LITER / LENGTH / ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LOCAL DEPRESSION
LDG	LANDING
LEV	LEVEL
LF	LINEAR FOOT
LG	LENGTH / LONG
LH	LAMP HOLE / LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDINAL
LP	LOW POINT / LOW PRESSURE / LAMP POST
LPG	LIQUID PETROLEUM GAS
LT	LEFT / LIGHT
LTS	LIME TREATED SOIL
LW	LOW WATER
LWL	LOW WATER LEVEL
LWR	LOWER
m	METER
M	MALE (PIPE THREAD)
mA	MILLIAMPS
MACH	MACHINE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX / MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MCR	MIDDLE OF CURB RETURN
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBER
MFR	MANUFACTURER
MFRD	MANUFACTURED
MGD	MILLION GALLONS PER DAY
MH	MANHOLE / MAINTENANCE HOLE
MHT	MEAN HIGH TIDE
MHW	MEAN HIGH WATER
MI	MALLEABLE IRON / MILE
MICRON	1/1,000,000 METER
MIL	MILITARY / 1/1,000TH INCH
MIN	MINIMUM / MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MK	MARK
MLW	MEAN LOW WATER
mm	MILLIMETER
MO	MOTOR OPERATED / MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MOR	MORTAR
MS	MOP SINK
MSL	MEAN SEA LEVEL
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MTR	MOTOR
N	NORTH
NaOCL	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE (CAUSTIC SODA)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GRADE / NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER / NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRCP	NON-REINFORCED CONCRETE PIPE
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
OBJ	OBJECT
OC	ON CENTER / OVER-CROSSING
OD	OUTSIDE DIAMETER / OVERALL DIMENSION
OE	OUTER EDGE
OF	OVERFLOW / OUTSIDE FACE
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVER HEAD
OHW	OVERHEAD WIRES
OPER	OPERATOR / OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OWG	OIL, WATER, GAS
OZ	OUNCE
P	POLE / PAGE / PIPE
P/S	POLE AND SHELF
PA	PLANTING AREA
PART	PARTITION
PAVMT	PAVEMENT
PB	POLYBUTYLENE / PULL BOX
PC	POINT OF CURVATURE / PRIMARY CLARIFIER / PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVE
PCOTG	PRESSURE CLEANOUT TO GRADE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PE	PLANT EFFLUENT / POLYETHYLENE / POLYELECTROLYTE POLYMER
PG	PRESSURE GAGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT / POINT OF INTERSECTION
PK	PARKING
PL	PLATE / PROPERTY LINE / PLACE
PLAS	PLASTER / PLASTIC
PLT	PLANT
PLWD	PLYWOOD
PM	PRESSED METAL
PNEU	PNEUMATIC
PNL	PANEL
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POT	POINT OF TANGENT
PP	POWER POLE / POLYPROPYLENE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	POUNDS PER MINUTE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCT	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROF	PROFILE
PRV	PRESSURE REGULATING, RELIEF OR REDUCING VALVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY / PAINT / PRESSURE
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
PW	POTABLE WATER
QT	QUARRY TILE
QTY	QUANTITY
QUAD	QUADRANGLE / QUADRANT
R	RADIUS / RISER / RATE OF SLOPE
R&O	ROCK AND OIL
R/W	RIGHT OF WAY
RAC	RECYCLED ASPHALT CONCRETE
RAG	RETURN AIR GRILLE
RAP	RECLAIMED ASPHALT PAVEMENT
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN / ROUND
RED	REDUCER / REDUCING
REF	REFERENCE / REFER / REFRIGERATOR
REG	REGULATING
REINF	REINFORCE / REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING / RETURN
REV	REVISION
REW	RECLAIMED WATER
RF	ROOF / RAISED FOUNDATION / ROUGH FACE
RFG	ROOFING
RGE	REGISTERED GEOTECHNICAL ENGINEER
RH	REDHEAD / RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RISING STEM
RSL	RAW SLUDGE
RT	RIGHT
RTP	REINFORCED THERMOSETTING PLASTIC
RTU	REMOTE TERMINAL UNIT
RW	REDWOOD
RWL	RAINWATER LEADER
S	SOUTH / SCUM / SINK / SECOND / SLOPE /
S/O	SOUTH OF
SA	SAMPLE
SAN	SANITARY
SBR	STYRENE BUTADIENE (RUBBER)
SC	SPARE CHEMICAL / SECONDARY CLARIFIER
SCCP	STEEL CYLINDER CONCRETE PIPE
SCD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	SANITARY DRAIN & VENT / SMOKE DETECTOR
SDR	STANDARD THERMOPLASTIC PIPE DIMENSION RATIO / STORM DRAIN
SEC	SECONDARY / SECTION
SER	SERIES
SETT	SETTING
SF	SQUARE FOOT
SH	SHOWER
SHELV	SHELVING
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SL	SLUDGE
SLDG	SLIDING
SLG	SLUICE GATE
SOG	SLAB ON GRADE
SOLN	SOLUTION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPK	SPIKE
SQ	SQUARE
SS	STAINLESS STEEL / SANITARY SEWER / SERVICE SINK
SSB	SELECT SUB-BASE
SSPWC	STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION
SSU	SECONDS SAYBOLT UNIVERSAL
ST	STREET / STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STEAM
STR	STRAIGHT / STRUCTURAL
SU	STEAM LINE
SUCT	SUCTION
SV	SOLENOID VALVE
SW	SIDEWALK
SWD	SIDEWALK DRAIN
SWGR	SWITCHGEAR
SWR	SIDEWALL REGISTER
SY	SQUARE YARD
SYM	SYMMETRICAL / SYMBOL
SYS	SYSTEM
T	THERMOSTAT / TREAD OF STAIR / TANGENT /
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TB	TACK BOARD
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TEL	TELEPHONE
TEMP	TEMPERATURE / TEMPORARY
TF	TOP OF FOOTING
TH	TEST HOLE
THK	THICK / THICKNESS
THR	THRESHOLD
THR'D	THREADED
TK	TANK / TACK
TL	TRAVERSE LINE
TOC	TOP OF CONCRETE
TOE	THREAD ONE END
TOL	TOILET
TOM	TOP OF MASONRY
TOP	TOP OF PIPE
TOPO	TOPOGRAPHIC
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TELEPHONE POLE
TR	TRACT
TRANS	TRANSMITTER / TRANSITION /TRANSMISSION
TS	TRAFFIC SIGNAL
TSB	TOP SET BASE
TSC	TRAFFIC SIGNAL CONDUIT
TV	THERMOSTATIC VALVE / TELEVISION
TW	THERMOMETER WELL /TRAVELED WAY
TYP	TYPICAL
UB	UNION BONNET
UBC	UNIFORM BUILDING CODE
UC	UNDER-CROSSING
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNID	UNIDENTIFIED
UNO	UNLESS NOTED OTHERWISE
UOI	UNLESS OTHERWISE INDICATED
UPS	UNINTERRUPTABLE POWER SUPPLY
UR	URINAL
USA	UNDERGROUND SERVICE ALERT
USGS	UNITED STATES GEOLOGICAL SURVEY
UV	ULTRAVIOLET
UW	UTILITY WATER
V	VALVE / VERTICAL / VENT / VOLT / VOLUME
VAC	VACUUM
VAR	VARIES / VARIABLE
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VSL	VERTICALLY SLOTTED
VTC	VENT TO CEILING
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
VWM	VERIFY WITH MANUFACTURE
W	WEST / WASTE / WIDTH / WIDE FLANGE / WATER
W/	WITH
W/O	WEST OF / WITHOUT
WC	WATER COLUMN / WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WOG	WATER, OIL, OR GAS
WP	WATERPROOFING / WORKING PRESSURE / WORK POINT
WPJ	WEAKEN PLANE JOINT
WS	WATER SURFACE
WSTP	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WWP	WATER WORKING PRESSURE
XCONN	CROSS CONNECTION
XS	EXTRA STRONG
XSEC	CROSS SECTION
XXS	DOUBLE EXTRA STRONG
YD	YARD
YR	YEAR
Z	ZERO / ZONE
ZN	ZINC
•	POUND
&	AND
@	AT

PRELIMINARY
NOT FOR CONSTRUCTION

6-21-10

FOR ADDITIONAL ABBREVIATIONS SEE:

CIVIL - GENERAL CIVIL SHEETS
PIPING - PIPING SCHEDULE
ELECTRICAL - GENERAL ELECTRICAL SHEETS
INSTRUMENTATION - GENERAL INSTRUMENTATION SHEETS

OTHER ABBREVIATIONS CONFORM TO ANSI STANDARD ABBREVIATIONS Z32.2.3

REV 040207

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED MWH STANDARD
DRAWN MWH STANDARD
CHECKED MWH STANDARD

SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE

MWH

Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

ABBREVIATIONS

SHEET G-3

GENERAL SYMBOLOGY

- NEW CONSTRUCTION
- EXISTING (SCREENED OR DOTTED)
- FUTURE (PHANTOM)
- EXISTING TO BE REMOVED OR DEMOLISHED

MATERIAL SYMBOLOGY

- CONCRETE (PLAN AND SECTION)
- GROUT OR SAND (PLAN AND SECTION)
- BRICK (PLAN AND SECTION)
- CMU (PLAN AND SECTION)
- STEEL/METAL/FRP (SMALL SCALE SECTION)
- CHECKERPLATE OR SOLID FRP GRATING (PLAN)
- CHECKERPLATE (SECTION)
- GRATING (PLAN)
- GRATING OR SOLID FRP GRATING (SECTION)
- SAFETY GRATING (PLAN)
- SAFETY GRATING (SECTION)
- RAILING (PLAN)
- WOOD (PLAN OR ELEVATION)
- LUMBER/FRAMING - NOMINAL
- LUMBER - TRIMMED (BLOCKING OR SHIMS)
- OR GLULAM (SECTION)
- GLULAM (ELEVATION)
- OR PLYWOOD (SMALL SCALE)
- FINISHED GRADE
- GRAVEL/DRAINROCK/AGGREGATE BASE

VALVE AND GATE ACTUATORS

- DIAPHRAGM OPERATOR
- D = DIGITAL
E/H = ELECTROHYDRAULIC
P = PNEUMATIC
S = SOLINOID
T = TEMPERATURE
- HAND / MANUAL OPERATOR (ALSO SHOWN AS NO OPERATOR)
- M MOTOR OPERATOR
- PISTON ACTUATOR
- PRESSURE BALANCED DIAPHRAGM ACTUATOR
- PRESSURE REGULATOR WITH EXTERIOR TAP
- PRESSURE REGULATOR (SELF CONTAINED)
- PRESSURE RELIEF OR SAFETY ACTUATOR
- WEIGHT BALANCED OPERATOR

VALVES

- 3 WAY MULT-PORT VALVE
- 4 WAY MULTI-PORT VALVE
- AIR VACUUM, AIR RELEASE, OR AIR VACUUM AND AIR RELEASE ASSEMBLY
- ANGLE VALVE
- BACK-PRESSURE VALVE
- BACKFLOW PREVENTER VALVE
- BACKWATER VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- CHECK VALVE - ANGLE
- CHECK VALVE - BALL
- CHECK VALVE - SILENT
- CHECK VALVE - STOP
- CONE VALVE
- DIAPHRAGM VALVE
- FLAP VALVE
- GATE VALVE
- GLOBE VALVE
- HOSE BIBB VALVE FROM TOP, FRONT AND SIDE VIEW
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE - ECCENTRIC
- PLUG VALVE - LUBRICATED
- OR PRESSURE REGULATING VALVE
- PRESSURE RELIEF VALVE
- SLEEVE VALVE
- TELESCOPING VALVE

GATES

- SLIDE GATE (CAST IRON, ALUMINUM OR STAINLESS STEEL)
- STOP GATE OR SHEAR GATE

PUMPS & COMPRESSORS

- AIR DRIVEN DIAPHRAGM PUMP
- HORIZONTAL ANSI END SUCTION PUMP
- CENTRIFUGAL PUMP
- CENTRIFUGAL WET PIT PUMP OR TURBINE PUMP
- CHEMICAL MEETERING PUMP
- CIRCULATING PUMP
- DRUM PUMP
- GEAR PUMP OR ROTARY POSITIVE DISPLACEMENT BLOWER
- HORIZONTAL SPLIT CASED PUMP
- HOSE PUMP
- PISTON PUMP
- PROGRESSIVE CAVITY PUMP
- ROTARY LOBE PUMP
- SAMPLE PUMP
- SUBMERSIBLE PUMP
- SUBMERSIBLE TURBINE PUMP
- VERTICAL TURBINE PUMP
- PISTON DRIVEN COMPRESSOR
- COMPRESSOR

FLOW MEASUREMENT INSTRUMENTS

- D M DENSITY FLOWMETER
- DISPLACEMENT FLOWMETER
- FLOW ORIFACE
- FLOW ORIFACE WITH QUICK CHANGE FITTINGS
- FLOW TUBE
- FLOW TURBINE
- FLOW VANE
- FLUME

FLOW MEASUREMENT INSTRUMENTS (CONTINUED)

- M M MAGNETIC FLOWMETER
- PADDLE WHEEL METER
- PITOT TUBE METER (DOUBLE)
- PITOT TUBE METER (SINGLE)
- ROTAMETER / VARIABLE AREA FLOWMETER
- ULTRASONIC FLOWMETER
- VENTURI FLOWMETER
- VORTEX SHEDDING FLOWMETER
- WEIR METER

PIPING ENDS (SINGLE-LINE)

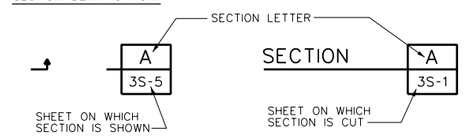
- BLIND FLANGE
- CAP - BREATHER
- CAP - SCREW / THREADED
- CAP - WELDED
- CAP - QUICK DISCONNECT
- EXPANSION JOINT
- FLANGED
- FLANGED COUPLING ADAPTER
- FLANGED COUPLING ADAPTER - RESTRAINED
- OR FLEXIBLE CONNECTION - BELLOWS TYPE
- GROOVED END COUPLING
- MECHANICAL JOINT
- PUSH-ON JOINT - BELL AND SPIGOT
- PUSH-ON JOINT - RESTRAINED
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- REMOVABLE SPOOL PIECE
- SLEEVE TYPE COUPLING
- SLEEVE TYPE COUPLING - RESTRAINED
- UNION
- WELDED

PRELIMINARY
NOT FOR CONSTRUCTION

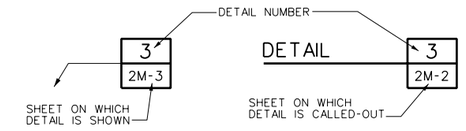
6-21-10

REFERENCE SYMBOLS

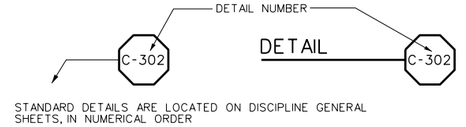
SECTION IDENTIFICATION



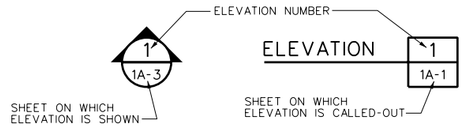
DETAIL IDENTIFICATION



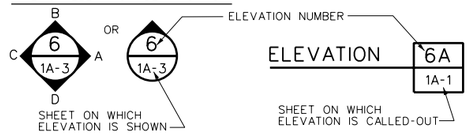
STANDARD DETAIL IDENTIFICATION



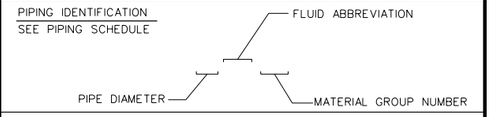
EXTERIOR ELEVATION IDENTIFICATION



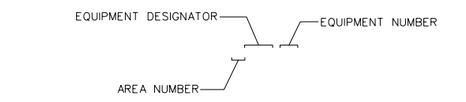
INTERIOR ELEVATION IDENTIFICATION



PIPING IDENTIFICATION
SEE PIPING SCHEDULE



EQUIPMENT IDENTIFICATION
SEE EQUIPMENT SCHEDULE/SPECIFICATIONS



MISCELLANEOUS

4-12	ROOM NUMBER	***	COORDINATE POINT
2-16	DOOR NUMBER	Ø	ROUND OR DIAMETER
1-8	WINDOW NUMBER	@	AT
13	ACCESSORY NUMBER	∠	ANGLE
4	WALL TYPE NUMBER	℄	CENTERLINE
·	SHEET KEY NOTES		

DISCIPLINE SPECIFIC SYMBOLS ARE SHOWN ON THE DISCIPLINE GENERAL DRAWINGS.

FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS.

REV 040407

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED MWH STANDARD
DRAWN MWH STANDARD
CHECKED MWH STANDARD

SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE

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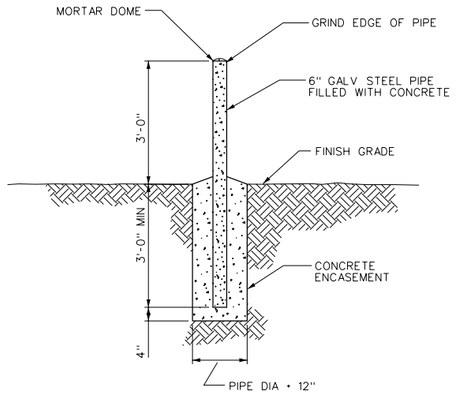
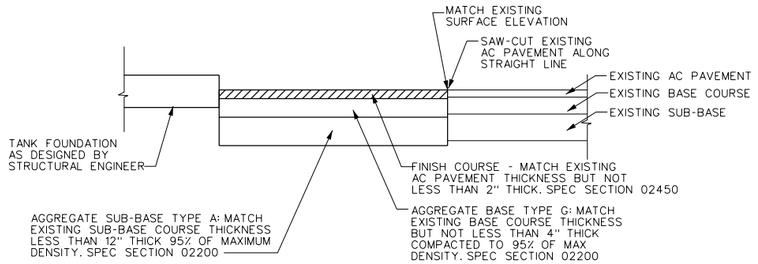
Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

SYMBOLS

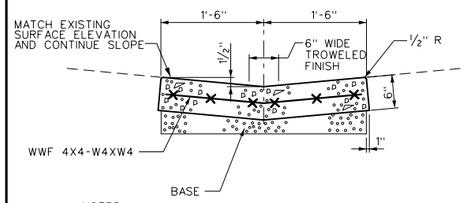
SHEET G-4



GUARD POST | 1 | VAR



AC PAVEMENT | 2 | VAR



NOTES:

1. EXPANSION JOINTS OF ½" PREMOLDED JOINT FILLER SHALL BE PLACED 50 FOOT SPACING AND WHERE GUTTER BUTTS OTHER CONCRETE STRUCTURES
2. BASE AND SUBGRADE PREPARATION SHALL MATCH ADJACENT PAVING

CONCRETE CROSS GUTTER | 3 | VAR

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
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Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

CIVIL DETAILS

SHEET GC-1

CONCRETE FOUNDATION FOR HOLDING TANK (SEE STRUCTURAL DRAWING)

11,500 GALLON CONE BOTTOM HOLDING TANK (SEE DRAWING M-1)

1 / GC-1 GUARD POST (TYP)

2.0' (TYP)

1.0'

9'-0"

INSTALL 9'-0"x8'-0" DOUBLE SWING DOOR

REMOVE EXISTING 3'-0"x6'-8" MAN DOOR

INSTALL NEW 24"x36" ALUM HATCH ON EXISTING CONCRETE VAULT TOP

2 / GC-1 AC PAVEMENT SECTION

NEW EDGE OF AC PAVEMENT

26.0'

EXISTING CONCRETE GUTTER DRAINAGE

EXTEND CONCRETE GUTTER TO MATCH EXISTING SHAPE, SURFACE THICKNESS, & SLOPE

3 / GC-1

EXISTING EDGE OF AC PAVEMENT

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
0 1 2 3 4 8
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
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(COMPANY OFFICER'S NAME) LICENSE NO. DATE

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Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

CIVIL LAYOUT
MICROSCREEN BUILDING AREA

SHEET
C-1

NOTES:

(1) CONTRACTOR TO MAKE THE CONNECTION BETWEEN APRIL AND OCTOBER (DRY PIPING). IF THE PIPE CONNECTION IS MADE OUTSIDE THESE MONTHS, A PUMP WILL BE REQUIRED TO DISCHARGE EFFLUENT INTO THE WETLANDS.

PRELIMINARY
NOT FOR CONSTRUCTION
6-22-10

HATCHERY & OPERATIONS BUILDING

EXISTING WETLANDS

3'x3'x2' DEEP PRECAST CONCRETE BASIN W/ CAST IRON FRAME AND OPEN SLOTTED COVER

EDGE OF PAVEMENT

4"TE(19)

5'

+/- 185 LF @ S=0.0200
MAINTAIN MINIMUM OF 2 FT COVER OVER PIPE

EXISTING FENCE LINE

2½"UW(16)

4"D(19)
EXISTING

16"RW(19)
EXISTING

4"TE(19)
EXISTING

(1) INSERT

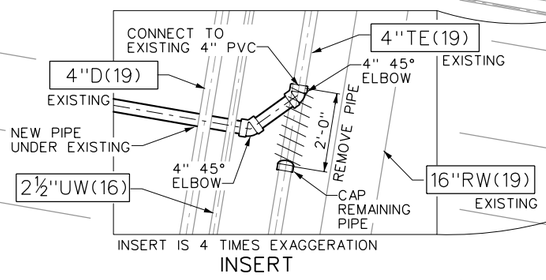
1"P(37)
EXISTING

3"IW(16)
EXISTING

EDGE OF PAVEMENT

RACEWAY 102

RACEWAY 202



INSERT

REV	DATE	BY	DESCRIPTION

SCALE
0 2 4 6 8 0
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
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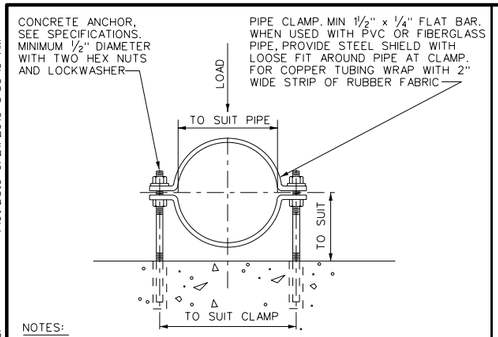
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

WETLANDS FEED PIPE

SHEET
C-2

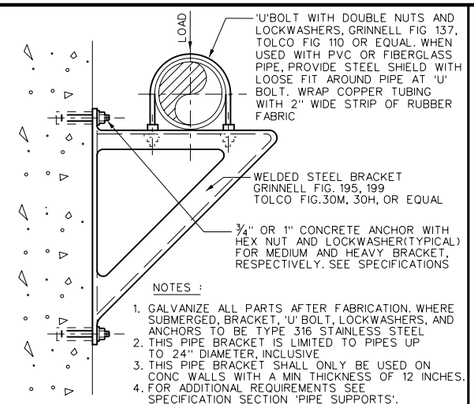


NOTES:

1. GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED, PIPE CLAMP, NUTS, LOCKWASHERS, ANCHORS AND SHIELDS TO BE TYPE 316 STAINLESS STEEL.
2. THIS PIPE CLAMP IS LIMITED TO PIPES UP TO 4" DIAMETER INCLUSIVE
3. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATIONS SECTION 'PIPE SUPPORTS'

PIPE CLAMP

(FOR PIPE 4" DIAMETER AND SMALLER) REV 042202 — M-101

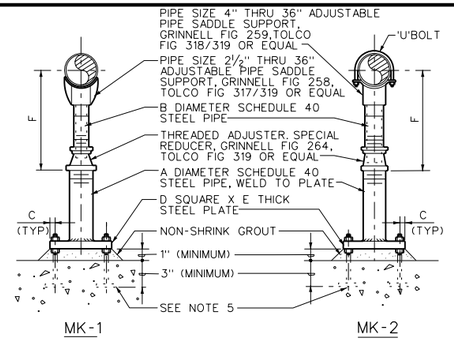


NOTES :

1. GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED, BRACKET, 'U' BOLT, LOCKWASHERS, AND ANCHORS TO BE TYPE 316 STAINLESS STEEL
2. THIS PIPE BRACKET IS LIMITED TO PIPES UP TO 24" DIAMETER, INCLUSIVE
3. THIS PIPE BRACKET SHALL ONLY BE USED ON CONC WALLS WITH A MIN THICKNESS OF 12 INCHES.
4. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.

PIPE BRACKET

(FOR PIPE 24" DIAMETER AND SMALLER) REV 072501 — M-104



NOTES:

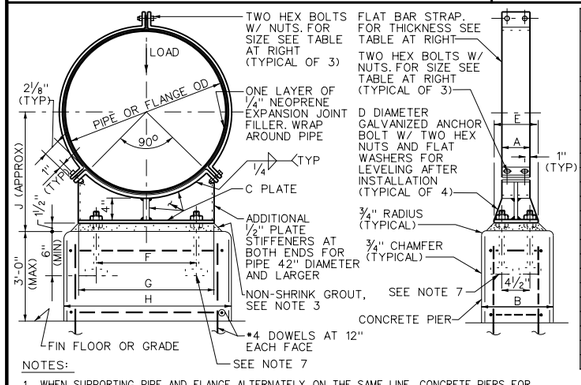
1. FOR ADDITIONAL REQUIREMENTS SEE SPEC SECTION 'PIPE SUPPORTS'.
2. GALVANIZE ALL PARTS AFTER FABRICATION.
3. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
4. THIS PIPE SUPPORT IS LIMITED TO PIPE FROM 2½" DIAMETER TO 36" DIAMETER INCLUSIVE.
5. GALVANIZED ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER. PROVIDE BAR 4 X ½ X 4" WELDED TO BOLT. (TYP OF 4) SEE SPECIFICATIONS.

DIMENSIONS IN INCHES							
NOMINAL PIPE SIZE	A	B	C	D	E	F (APPROX) (MINIMUM)	F (APPROX) (MAXIMUM)
2½	2	1½	1	6	⅜	7	11½
3	2	1½	1	6	⅜	7 5/16	11 13/16
3½	2	1 1/2	1	6	⅜	7 9/16	12 1/16
4	3	•2½/3	1⅛	7½	½	10¼	14¾
6	3	•2½/3	1⅛	7½	½	11 9/16	16 1/16
8	3	•2½/3	1⅛	7½	½	13 9/16	18 1/16
10	3	•2½/3	1⅛	7½	½	14⅝	19⅛
12	3	•2½/3	1⅛	7½	½	15⅝	20⅛
14	4	3	1¼	9	⅝	18⅞	23⅜
16	4	3	1¼	9	⅝	19⅞	24⅜
18	6	4	1½	11	¾	22¼	26¾
20	6	4	1½	11	¾	23¼	27¾
24	6	4	1½	11	¾	26½	31
30	6	4	1½	11	¾	29⅝	34⅛
32	6	4	1½	11	¾	30⅝	35⅛
36	6	4	1½	11	¾	32⅝	37⅛

* SEE MANUFACTURER

ADJUSTABLE PIPE SUPPORT WITH OR WITHOUT 'U' BOLT

(FOR PIPE 36" DIAMETER AND SMALLER) REV 011402 — M-108



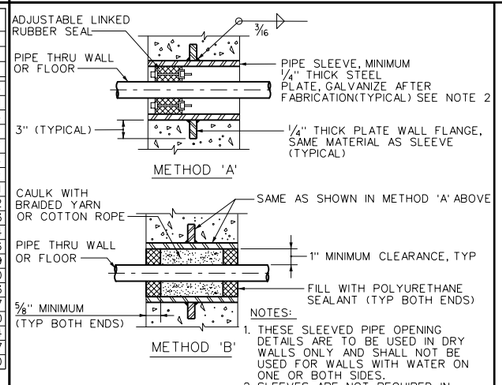
NOTES:

1. WHEN SUPPORTING PIPE AND FLANGE ALTERNATELY ON THE SAME LINE, CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION 'H' FOR FLANGE SUPPORT
2. PIPE SUPPORTS SHALL BE LOCATED IN PLAN AT POINTS MARKED THUS: (X)
3. WHERE DIFFERENTIAL SETTLEMENT IS LIKELY TO OCCUR, OMIT GROUT AS DIRECTED BY THE ENGINEER
4. GALVANIZE ALL PARTS AFTER FABRICATION
5. WHERE DIRECTED BY THE STRUCTURAL ENGINEER, BOTTOM OF PIERS SHALL EXTEND BELOW BOTTOM OF SLAB
6. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS
7. GALVANIZED ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER. PROVIDE BAR 4 X ½ X 4" WELDED TO BOLT. (TYP OF 4) SEE SPECIFICATIONS

DIMENSIONS IN INCHES																
NOMINAL PIPE SIZE						STRAP		SUPPORTING								
						BOLT SIZE	FLAT BAR	PIPE				FLANGE				
	A	B	C	D	E			F	G	H	J	F	G	H	J	
6	4	12	⅜	⅝	6	½	¼	4½	8	14	10	6½	11	16	13	
8	4	12	⅜	⅝	6	½	¼	5	9½	14	11	7½	13	18	14	
10	4	12	⅜	⅝	6	½	¼	6	11	16	12	9	15	20	15	
12	4	12	⅜	⅝	6	½	¼	7	13	18	13	10	17	22	16	
14	4	12	⅜	⅝	6	½	¼	8	13	18	14	11	18	23	17	
16	4	12	⅜	⅝	6	½	¼	9	15	21	15	12	20	26	18	
18	4	12	⅜	⅝	6	½	¼	10	16	22	16	13	21	26	19	
20	5	12	⅜	⅝	6	⅝	⅜	10	18	24	17	15	23	28	21	
22	5	12	⅜	⅝	6	⅝	⅜	12	19	24	18	16	25	30	22	
24	5	12	⅜	⅝	6	⅝	⅜	13	21	26	19	16	26	32	23	
26	5	12	⅜	¾	6	⅝	⅜	14	22	28	20	18	28	34	24	
30	5	12	⅜	¾	6	⅝	⅜	16	25	30	22	20	31	36	26	
34	5	15	⅜	¾	6	⅝	⅜	18	28	33	24	22	35	41	29	
36	6	15	⅜	¾	6	¾	⅜	19	29	34	25	24	36	42	30	
42	6	18	½	1	8	¾	⅜	21	33	39	28	27	41	47	33	
48	6	18	½	1	8	¾	⅜	24	38	44	31	30	46	52	37	
54	6	18	½	1	8	¾	⅜	28	42	48	34	34	50	56	40	
60	6	18	½	1⅛	8	¾	⅜	32	46	52	37	36	56	62	44	
66	6	18	½	1⅛	8	¾	⅜	33	51	58	40	40	61	68	47	
72	6	18	½	1⅛	8	¾	⅜	36	55	62	43	44	65	72	50	

PIPE SUPPORT WITH STRAP

(FOR PIPE 72" DIAMETER AND SMALLER) REV 011402 — M-110



NOTES:

1. THESE SLEEVED PIPE OPENING DETAILS ARE TO BE USED IN DRY WALLS ONLY AND SHALL NOT BE USED FOR WALLS WITH WATER ON ONE OR BOTH SIDES.
2. SLEEVES ARE NOT REQUIRED IN CORE DRILLED WALLS, PENETRATIONS THROUGH EXISTING WALLS, OR FLOORS

SLEEVED PIPE OPENING

REV 011402 — M-111

PRELIMINARY
NOT FOR CONSTRUCTION

6-21-10

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED MWH STANDARD
DRAWN MWH STANDARD
CHECKED N. ZAUGG

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MWH

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MECHANICAL
STANDARD DETAILS

SHEET
GM-1

NEW TANK FOUNDATION, EDGE NEW AC PAVEMENT

CONCRETE ENCASEMENT

EDGE OF EXISTING AC PAVEMENT

1" TAP, VALVE, AND HOSE CONNECTION

A

4"x3" REDUCER

3" CHECK VALVE

4" TEE

3" FEMALE QUICK CONNECT CPLNG W/CAP ATTACHED

3" BALL VALVE FULL BORE

4" BALL VALVE FULL BORE

11,500 GAL CONE BOTTOM HOLDING TANK

PLUG ANNULAR SPACE OF 12" PVC PIPE W/NON-SHRINK GROUT OR APPROVED EQUAL

4" SCH 80 PVC PIPE IN EXISTING 12" PIPE

4" TEE (SET VERTICALLY)

DOUBLE 4" ELBOW (SET VERTICALLY)

4"x3" REDUCER

3" BALL VALVE FULL BORE

3" CHECK VALVE

4" DIA FLEXIBLE COUPLING AT TANK CONNECTION

DOUBLE 4" ELBOW (SET VERTICALLY)

EXISTING 12" DIA PVC PIPE

REMOVE EXISTING 12" PIPE

3" FEMALE QUICK CONNECT CPLNG W/CAP ATTACHED

2" BALL VALVE W/OPERATIING NUT

2" CHECK VALVE

4 / GC-1 PRECAST CONCRETE VALVE VAULT

3"x2" TEE

3"x2" TEE

EXISTING 3" DRAIN

ENLARGEMENT 1 / M-1

0 1/2 1
(SCALE IN FEET)

TO FILL PORT NEAR TANK TOP

4" SCH 80 GALV STL PIPE

4" BALL VALVE FULL BORE

4" TEE

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

4" BALL VALVE FULL BORE

2'-1"

3'-2"

4" SCH 80 GALV STL PIPE

4 / GC-1 PRECAST CONCRETE VALVE VAULT

M-106 ADJUSTABLE PIPE SUPPORT

2" BALL VALVE W/OPERATIING NUT

2" CHECK VALVE

PLUG ANNULAR SPACE OF 12" PVC PIPE W/NON-SHRINK GROUT OR APPROVED EQUAL

EXISTING 3" DRAIN

3"x2" TEE

2" 90° ELBOW

2" 90° ELBOW

2" SCH 80 PVC DRAIN PIPE

SECTION A / VAR

0 1/2 1
(SCALE IN FEET)

REV	DATE	BY	DESCRIPTION

SCALE
AS SHOWN

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

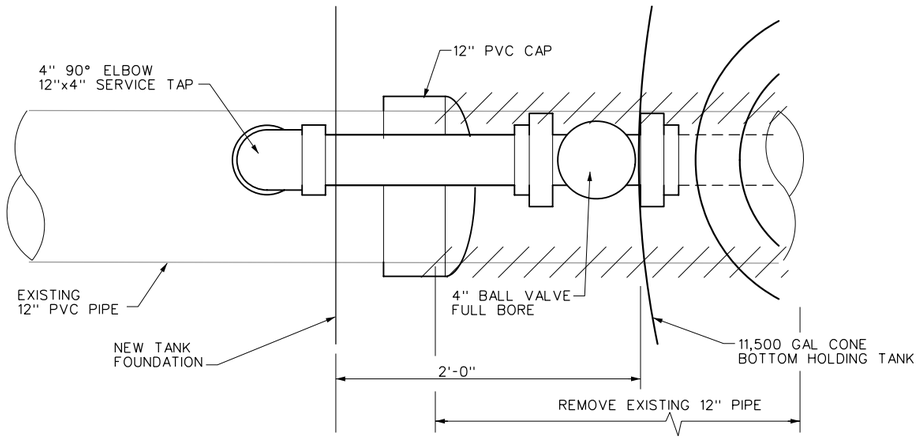
SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE

MWH

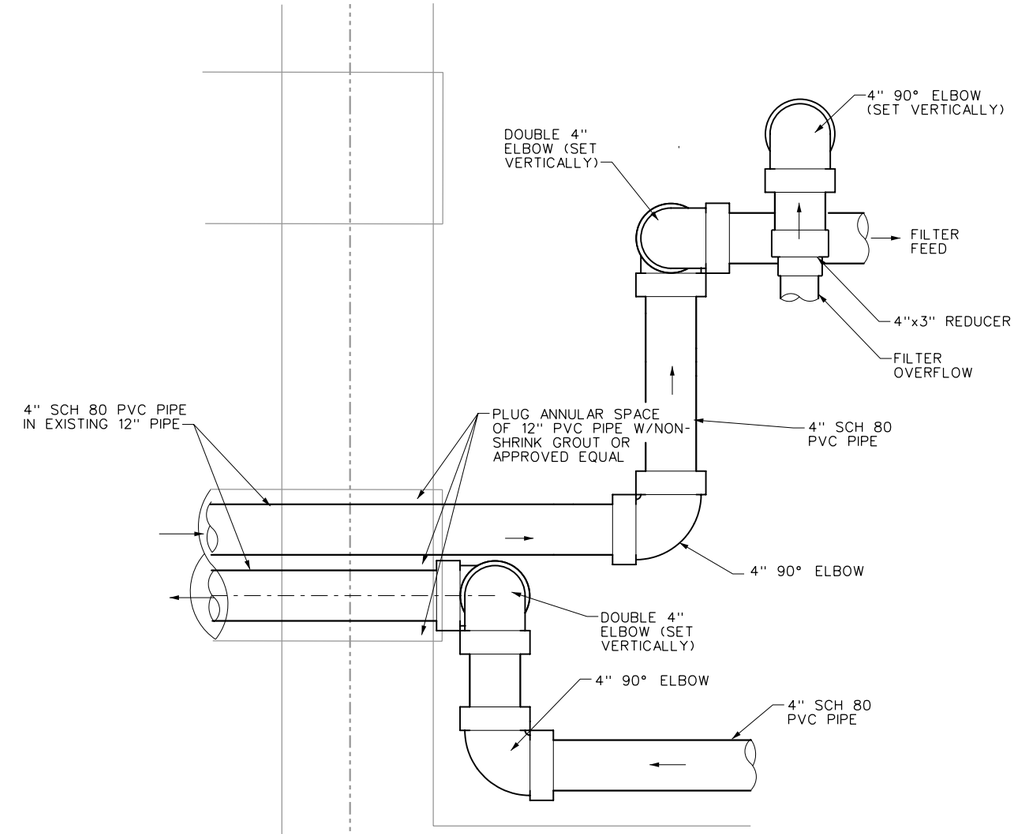
Utah Division of Wildlife Resources
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

MECHANICAL DETAILS

SHEET
GM-2



ENLARGEMENT 2
M-1



ENLARGEMENT 3
M-1

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
AS SHOWN

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

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MECHANICAL DETAILS

SHEET
GM-3

TANK FOUNDATION

2'-0" (TYP)

4" DIA SCH 80 GALV STL PIPE AND FITTINGS

11,500 GAL CONE BOTTOM HOLDING TANK

1 GM-2 ENLARGEMENT

4" DIA SCH 80 PVC PIPE INSIDE EXISTING 12" PVC PIPE

TANK BOTTOM CONNECTION, 4" TEE

2 GM-3

A GM-2

18'-10"

A M-2

EXISTING METER VAULT

ROOF OVERHANG

EXISTING HANDRAIL

3 GM-3

FILTER OVERFLOW

FILTER FEED

3 CY DUMPSTER WITH COVER

4" DIA PLUG VALVE

SUBMERSIBLE WASTEWATER PUMP (TYP OF 2)

1'-6"

1'-6"

4" DIA SCH 80 PVC PIPE AND FITTINGS

B M-2

EXISTING 2'x5' SUMP

BAG DUMP

9'-0"

INSTALL 9'-0" x 8'-0" DOUBLE SWING DOOR

REMOVE EXISTING 3'-0"x6'-8" MAN DOOR

3'-0"

EXISTING EXPANSION TANK

RELOCATE EXISTING EXPANSION TANK & PIPING EASTERLY 3'-0"

EXISTING RACEWAY EFFLUENT MICROSCREEN BUILDING

D M-2

C M-2

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
0 2 4
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
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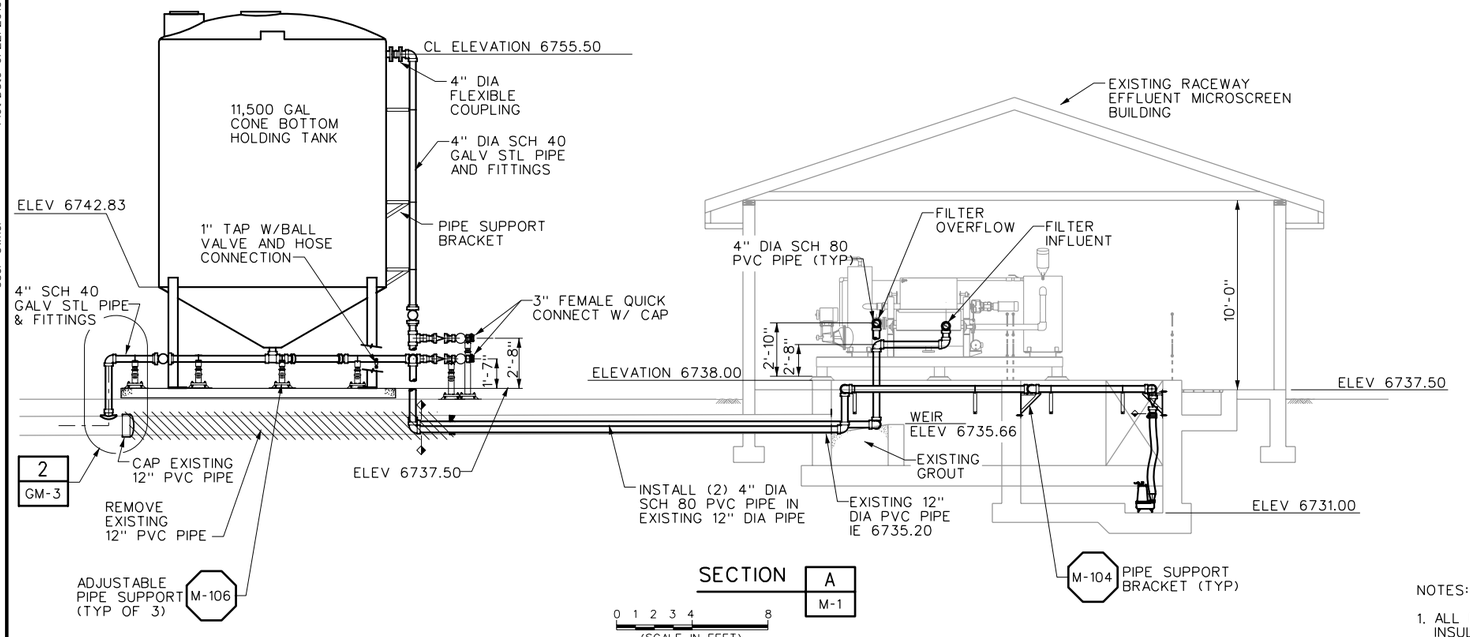
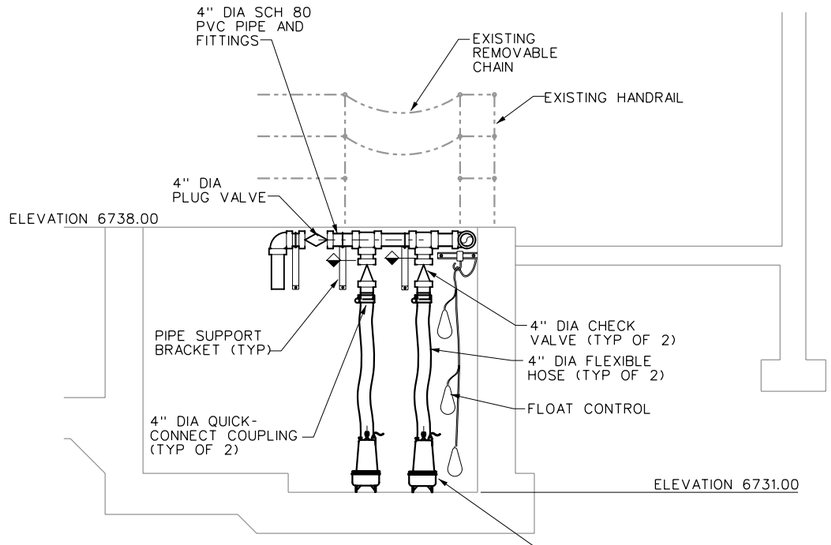
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

MECHANICAL LAYOUT

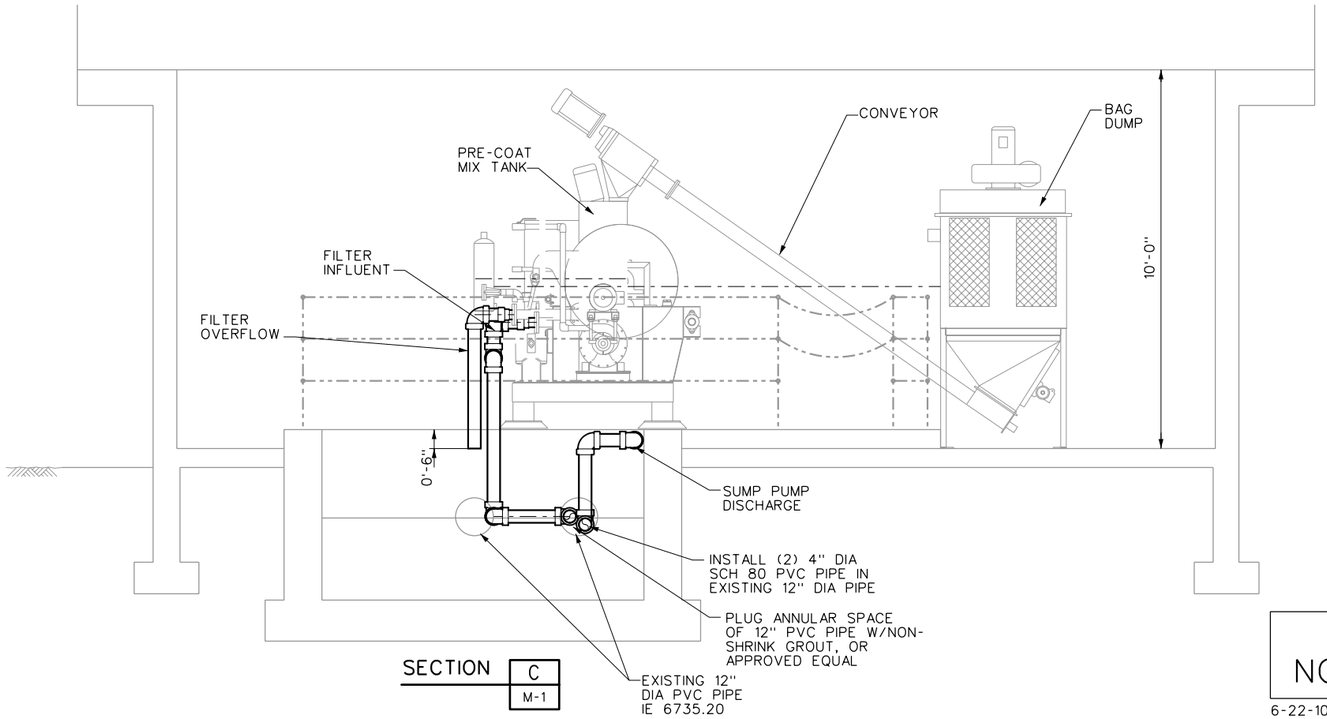
SHEET
M-1

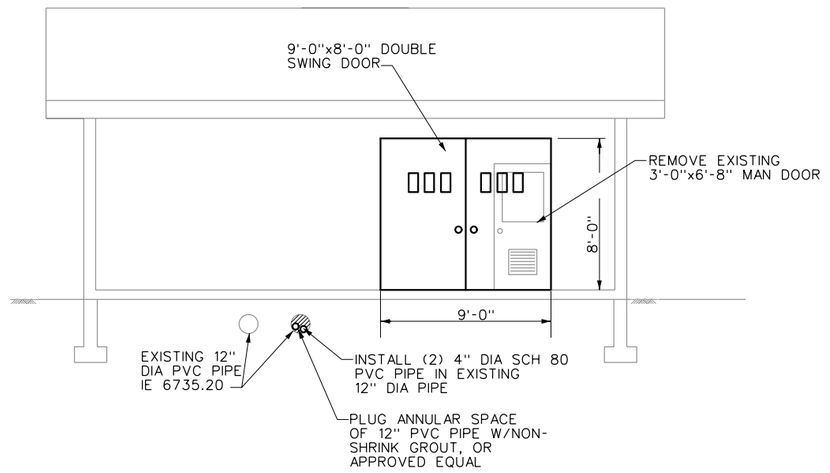




NOTES:

1. ALL EXTERIOR PIPING SHALL BE INSULATED AND HEAT TRACED.





PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
0 1 2 3 4 8
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED

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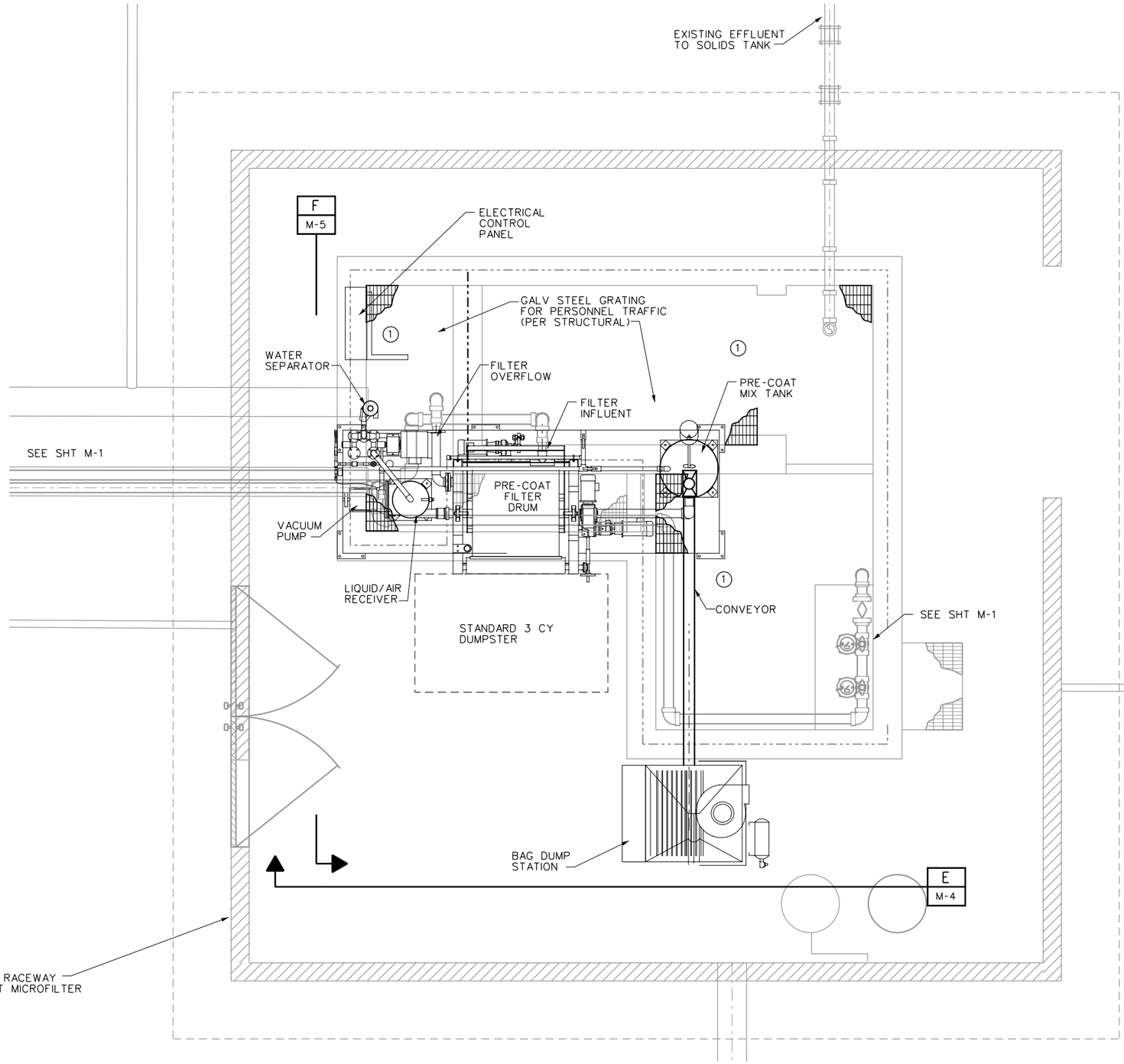
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

MECHANICAL SECTIONS

SHEET
M-2



NOTES:

(1) EQUIPMENT SHALL BE PLACED ON INDEPENDANT STRUCTURES DESIGNED BY A STRUCTURAL ENGINEER FOR THE LOADS ANTICIPATED AND SHALL NOT BE PLACED ON THE NEW GRATING.

PRELIMINARY
NOT FOR CONSTRUCTION
6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
0 1 2 4
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

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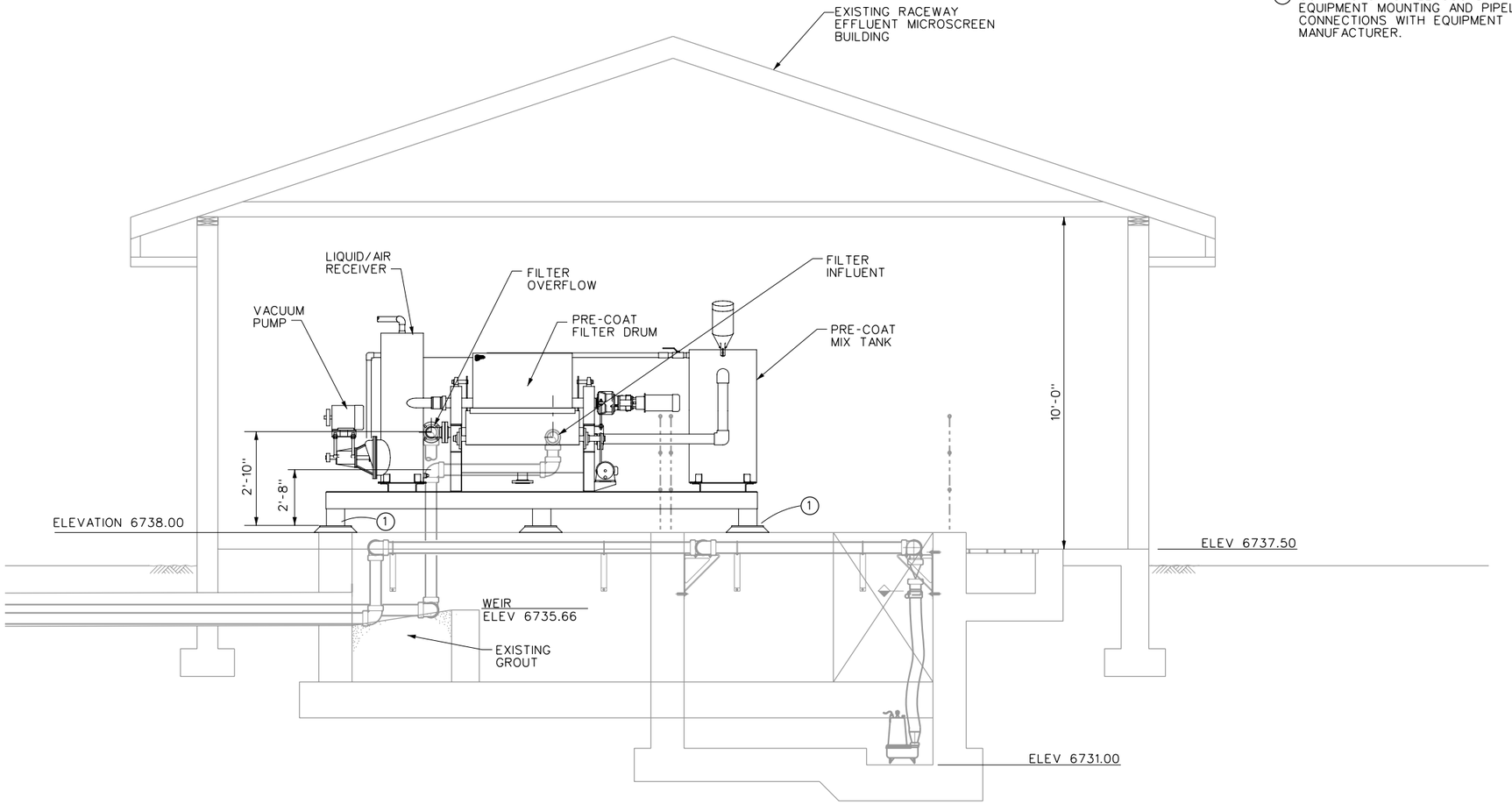
SOLIDS DISPOSAL PROJECT

PRECOAT VACUUM FILTER LAYOUT

SHEET
M-3

NOTES:

1. EQUIPMENT SHALL BE PLACED ON INDEPENDANT STRUCTURES DESIGNED BY A STRUCTURAL ENGINEER FOR THE LOADS ANTICIPATED AND SHALL NOT BE PLACED ON THE NEW GRATING.
2. CONTRACTOR SHALL COORDINATE EQUIPMENT MOUNTING AND PIPELINE CONNECTIONS WITH EQUIPMENT MANUFACTURER.



SECTION E / M-3

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
0 2 4
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
(PROJECT MANAGER'S NAME) LICENSE NO. DATE
(COMPANY OFFICER'S NAME) LICENSE NO. DATE

MWH

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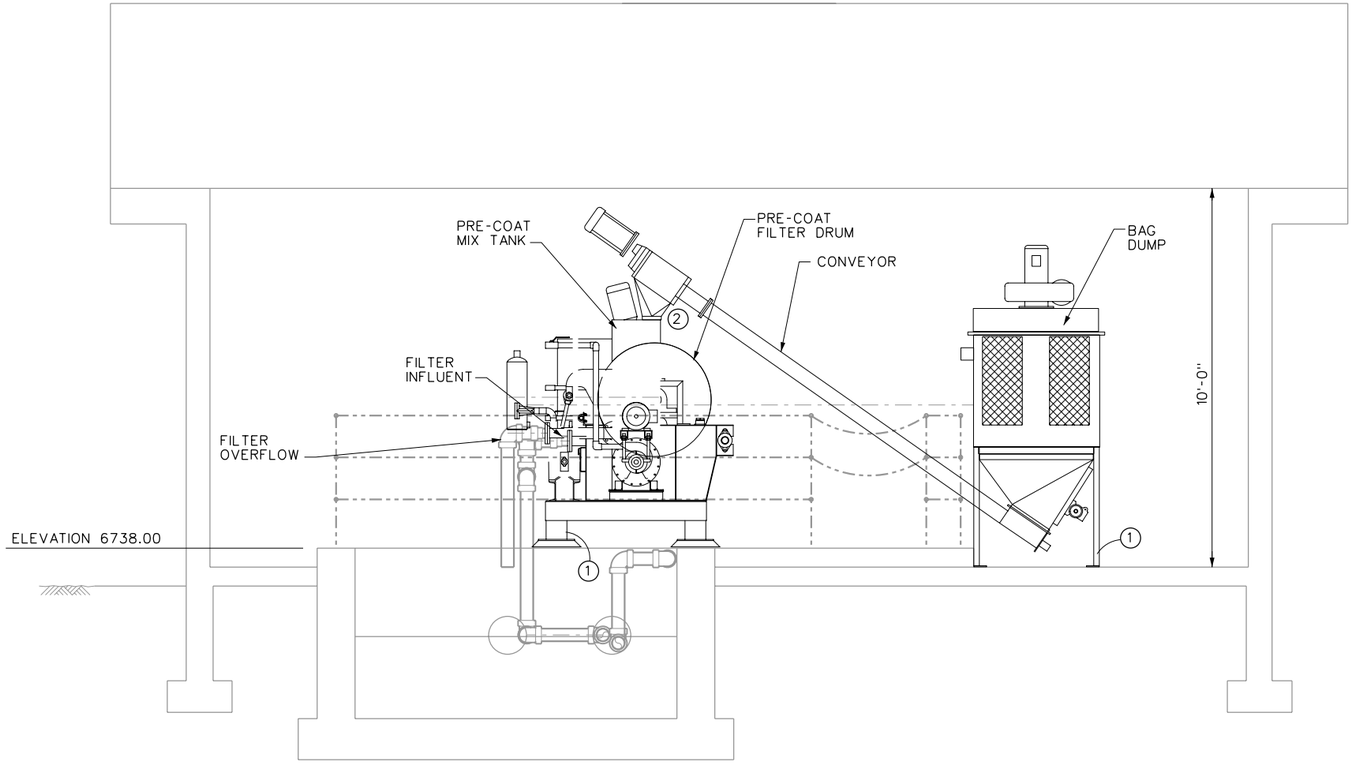
Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

PRECOAT VACUUM FILTER SECTIONS

SHEET
M-4

NOTES:

1. EQUIPMENT SHALL BE PLACED ON INDEPENDANT STRUCTURES DESIGNED BY A STRUCTURAL ENGINEER FOR THE LOADS ANTICIPATED AND SHALL NOT BE PLACED ON THE NEW GRATING.
2. CONTRACTOR SHALL DESIGN AND INSTALL STRUCTURAL SUPPORT FOR THE CONVEYOR DISCHARGE. STRUCTURAL CALCULATIONS SHALL BE STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF UTAH.



SECTION F / M-3

PRELIMINARY
NOT FOR CONSTRUCTION

6-22-10

REV	DATE	BY	DESCRIPTION

SCALE
0 2 4
(SCALE IN FEET)

DESIGNED R. DIAZ
DRAWN S. SOLLIE
CHECKED N. ZAUGG

SUBMITTED BY
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MWH

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Kamas Fish Hatchery
SOLIDS DISPOSAL PROJECT

PRECOAT VACUUM FILTER SECTIONS

SHEET
M-5